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ABSTRACT

This document is a guide for consultants observing teacher behavior, its effects on students, and learning environment conditions in a PLAN (Program for Learning in Accordance with Needs) classroom. (Appended are a series of 27 questions and answers which describe PLAN, an individualized, computer-assisted instructional system initially operating in 12 school districts.) The first section of the guide describes organizational procedures and the criteria for classroom organizatien based on whether the teacher assumes responsibility for activities or procedures which could be more effectively handled by the computer or the students. A 10-item checklist for assessing the organization of a PLAN classroom is included. The second and third sections describes counseling and tutoring by the PLAN teacher. Included are the precounseling checklist, steps in the counseling session, questions for evaluating the effects of counseling, a description of the method for determining the need to tutor, an outline of the purposes of tutoring, and types of questions to ask students to determine the effects of tutoring. Part 4 describes the process and several uses of planned group discussions in a PLAN classroom and lists questions for evaluating their effectiveness. Part 5 lists 12 activities, arrangements, and teacher behaviors often observed in PLAN classes but which do not contribute to the objective--to provide more information to consultants for use in modifying teacher behavior. (See also SP 004 480.) (JS)

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THE PLAN CLASSROOM

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A Guide for Consultants

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THE PLAN CLASSROOM

The important variables to consider in defining criteria for a PLAN classroom are the teacher behavior, resultant effect on the student's behavior and the environmental conditions which have been engineered to shape the learning situation. To observe any one in isolation would be inappropriate. The interaction of the three provides the real criterion. This paper will discuss the categories to observe in terms of process, effect, and arrangements. Process refers to what the teacher will be doing; effect refers to the kind of things you could determine by questioning students - the effect on PLAN students; arrangements refers to the managerial aspects.

The PLAN materials do not provide an end in themselves. A creative teacher will use the PLAN structure as outlined here and find many individual ways to complement and extend it. Items discussed in this paper should not be considered the "upper limit". That limit is controlled by the extent to which the teacher is able to understand the differences among students and individualize strategies with each student. The more effective the teacher is in accomplishing this, the more unique each teacher's role will become.

The first section of this paper discusses organizational procedures. There are a variety of detailed plans for classroom organization currently available. These plans are specific to materials and equipment currently available in PLAN classes and are therefore not included here. The attempt in the section on organizational procedures is to identify criteria and leave the specifics to be elaborated by each teacher depending on the classroom facilities, teaching plan, level and materials available during any academic year.

The second and third sections discuss counseling and tutoring. The role of the counselor-teacher is of major importance in a PLAN classroom. This is distinguished from the tutoring role by the topic. Tutoring refers to specific learning difficulties and counseling to assisting students with planning, decision making and implementing their plans. In this sense, counseling refers to the student managing his behavior and tutoring to the student receiving assistance with academic skills.

The fourth section discusses group meetings in PLAN classrooms. Group discussions are planned to meet an instructional need, as an extension of a student interest, as a planned part of the TLU or for purposes of demonstrating the roles different members perform in a group discussion.

A fifth section is included at the end of the report in an attempt to identify those activities, arrangements and teacher behaviors which are often observed in PLAN classes but which do not contribute to the objectives. If a teacher is spending a large part of her time involved in such activities one could predict that these activities are in lieu of some of those which have been identified as facilitating the goals of PLAN. This list would therefore provide more information for the consultant to use in modifying teacher behavior.

I. ORGANIZATIONAL PROCEDURES

The criterion for classroom organization is stated in a single question. Does the teacher assume responsibility for activities or procedures which could be more effectively handled by the computer or the students themselves. It is not a PLAN class if the teacher keeps elaborate records that parallel the computer or obtains materials for a student that he could obtain as easily by himself.

In a well-organized and effective PLAN classroom the teacher will be tutoring and counseling students rather than spending time in clerical tasks. The students should be assuming the major responsibility for managing their own learning. A checklist for assessing the organization of a PLAN classroom would include:

1. Study, test, conference and discussion areas well defined
2. Materials catalogued and accessible by students
3. Material and equipment maintenance procedures well established and students trained to follow the procedures
4. Procedures for replacing or substituting materials well defined and students trained to follow the procedures
5. Classroom standards of behavior specified and student trained to maintain behavior within limits specified by the standards
6. Students handling computer materials independent of the teacher at 5th grade and above
7. Student reading and responding to the computer print-out independent of the teacher at 5th grade and above
8. Provisions for re-evaluation of TLU choice at the completion of each module. The student should make this choice or at least participate in the decision.
9. The instructional day scheduled in order that students have large blocks of time in which to develop subject matter sub-schedules
10. Students are not assigned to seats but are free to move to various areas of the room or library to meet study requirements

II. COUNSELING

Process of Counseling

The information gathered before the counseling session should include

some summary of the individual's ability to manage his own learning. Some type of check-list could be developed by consultant and teacher. It might be as gross as the student:

_____completes TLUs in an appropriate length of time for him

_____handles materials and equipment effectively

_____organizes his day efficiently (sets some type of goal and achieves it)

_____is working on schedule in his POS

_____demonstrates learning behaviors appropriate to classroom standards

Using such a list, the teacher should assess each individual and determine his or her need for counseling. If some observational procedure is not used, we will have a teacher responding only on an "alarm" basis and counseling will be associated with the consequence of inappropriate behavior. It should also be associated with maintaining appropriate behavior.

After assessing the individuals in the class, the teacher needs to cover the following steps in a counseling session

1. Arrange the setting for two-way communication - (this obviates the teacher sitting <u>behind</u> the desk.)
2. Identify the <u>purpose with</u> the student. Be sure the student is committed to or at least knows what problem is to be discussed and understands it as a problem.
3. Identify possible factors that could be controlling or effecting the problems.
   _____what happens just before
   _____what happens at the same time
   _____what happens just after
   _____what patterns of behavior are associated with this particular problem
4. Identify at least two strategies to control conditions in number 3.
5. Agree on one of the alternatives with the second as a reserve.
6. Decide on a plan and schedule for implementation including a review conference.

Counseling sessions to following the one described here would be held to evaluate with the student progress he is making toward the identified goals. It is important to understand that counseling sessions provide the framework to reinforce a variety of behaviors to point-out progress the student is making

and to reinforce effective student managed behavior.

Effects of Counseling

1. Do you find evidence of a variety of individualized schedules and planning strategies in the room?
   Use the form on planning strategies to determine this criterion.
2. Does the student refer to special strategies planned for him as "the teacher and I agreed on..."
3. Is the student able to explain his individual schedule or any special strategies planned with him? Does he understand its purpose?
4. If the student has completed a counseling session:
   a) Does he understand his present behavior in relation to his goals?
   b) Does he have a plan to achieve his goal?
   c) Does the student have a method to assess any changes in his behavior toward his goals?

III. TUTORING

Process of Tutoring

There will be many instances of students tutoring each other in PLAN classrooms. This should be encouraged but does not have to be monitored by the teacher. Tutoring described here refers to teacher-student, tutoring sessions.

Method of Determing Need to Tutor

There are several methods which can be used to determine when to tutor in a PLAN class. The most obvious are the following.

A. Questioning students while the teacher is walking around the classroom.
   All students need to be checked informally periodically. The teacher may want to question students on the basis of observation or be more systematic and keep some type of list of who has been interviewed.
   Questions to ask include the following
   1. Ask what he is doing. Here you are looking for the way in which he relates his activity to some objective such as a guidance activity, an activity on a TLU or a special interest project.
   2. Ask what objectives he is working on. He should be able to identify the objective, read it, and perhaps restate it in his own words.

3. Ask some questions about the content. The questions are not aimed at recall. You want to determine if the student understands the process he should be using. A good example would be mathematics. You could have the student describe what he did to solve the problem. While he is describing the procedure it is possible to detect whether or not there is a need for specific tutoring. Questions then are aimed at having the student describe his present understanding of what he is working on and how he reached that understanding.

4. Avoid questions which do not require a specific response such as "How are you doing?" Anything could be answered and the response is usually "fine", which doesn't really tell you much.

5. Avoid one-word answer questions such as "Do you understand the objective? Are you ready for the test now? "Why" and "how" questions provoke more detailed response for tutoring.

B. Records

Teachers have access to information for each student from the completed summary print-outs. This determines where the students are working and if a student is working too long on a particular module. This computer information provides one clue for a possible need for tutoring. The computer print-out with the indication of pass or not pass or TC on a test would provide another indication. This would specify objectives missed and provides a good basis for tutoring.

C. Reviewing TLU Content

The teacher could identify those items most likely to cause trouble in a module. This procedure is particularly necessary in the early stages of the project when there are errors in the modules. By noting items with a high probability of difficulty for students, the teacher can screen students with some preliminary questions and reduce failure.

D. Student Request

There should be a procedure for the students to request help. This might be a sign up sheet or perhaps a more spontaneous method of requesting more than a short answer. The atmosphere and conditions to support this should be specified so we avoid comments like "I can't get the help I need from the teacher."

Purpose For Tutoring

At the present time, tutoring has been categorized in four areas: (1) Guiding student learning behaviors, (2) clarifying and extending concepts, (3) identifying and furthering student interests, and (4) tutoring for a deficit in the learning experience.

Teacher behavious in each category are:

A. Guiding Student Learning Behaviors

This procedure refers to the process of study behaviors a student uses while working in a TLU. The teacher will:

1. Clarify objectives.
2. Clarify the relationship between and activity and its objective.
3. Clarify the content of the TLU by explaining a step, example or activity.
4. Review objectives with a student prior to testing achievement of the objectives.
5. Demonstrate techniques to use in challenging a TLU.
6. Give positive reinforcement for appropriate student responses.

B. Clarifying and Extending Concepts

Almost all students will need this tutoring at some time to ensure that learning is generalized beyond the objectives in the TLUs. The teacher will:

1. Demonstrate techniques to explain, interpret, compare, and find parallel concepts.
2. Demonstrate techniques of predicting an outcome.
3. Ask students to relate the concept to personal experience.
4. Ask the student to relate the concept to societies, past and present.
5. Ask the student to relate concepts in the TLU to other subject areas.
6. Ask the student to relate ideas and questions that arise spontaneously to an existing objective that has been achieved previously.
7. Encourage the student to name or to suggest comparisons and parallel situations to extend concepts.

8. Give positive reinforcement for appropriate student responses.

C. Identifying and Extending Student Interest

This technique is available for students who are highly motivated or students who need some temporary change for purpose of motivation. The teacher will:

1. Ask for student ideas.
2. Examine TLU for possible areas of student interest.
3. Encourage the student to suggest relationship of concepts in TLU to his interest.
4. Give priority to self-selection of interest topics within TLU.
5. Give positive reinforcement of student work in interest areas beyond TLU.

D. Tutoring for a Deficit in the Learning Experience

When the student has not achieved the objective it could be due to inadequate experience provided in TLU, or some prior lack of background information. The sequence a teacher would follow in a tutoring session designed to cover such a deficit would include the following.

1. Identify the limits of the deficit.
2. Instruction should deal specifically with that segment of the process the student does not understand.
3. Reinforce the correct information or procedure the student is now using.
4. Determine a method of presenting the material which would make the student independent when faced with a similar problem.
   Inductive or deductive procedure could be used if the technique is presented in such a way that the student can use the technique alone another time.
5. Check comprehension by requiring the student to relate the new information to his previous understanding of the objective

Effect of Tutoring

The effect of tutoring should be evident when talking with students. Students should give evidence of understanding the content and of understanding the

procedures to obtain tutoring help. The questions a teacher asks to determine if the student needs tutoring can also be asked to determine if he has benefited from the tutoring. Those questions are relative to:

1. the objective
2. the relationship of several objectives
3. the content used to teach the objective

Questions relative to understanding the procedure of tutoring are:

1. When did you last meet with your teacher?
2. Did you ask for help or did she call you?
3. What did you talk about? (check comprehension)
4. What do you do when you don't understand an item?
5. What does the teacher do when you don't understand?
6. What do you do if an objective is particularly interesting to you and you want to work in related topics?

For those students who were involved in a tutoring session initiated to extend their interest in a particular area, questions should be asked relative to the activity or material which was used, their attitude toward the activity and the result. Did the topic become more interesting?

For those students who were involved in the tutoring session based on a deficit in the learning experience, questions dealing with

1. the students' understanding of that segment of the process that was previously troublesome.
2. his procedure the next time a similar situation arises.
3. the students' understanding of the new information and its relationship to the objective.

IV. GROUP DISCUSSION

Process of Group Discussion

Group discussions will go on informally in PLAN classrooms but there should also be evidence of discussions planned to meet a specific need. Generally this will be an instructional need but could be an enrichment or interest type activity as well. The determination of when a group discussion is needed is similar to the procedure used in determining the need for tutoring. If there is an individual instructional problem, a tutoring session is planned. If several students have the same problem, a group session is planned for purposes of instruction. The decision to have a group for purposes of instruction is made on

the basis of answers students give to your questions, receiving records kept by the teacher or computer, reviewing the content in the TLU to anticipate problem areas or student request. The procedure in such a session would be determined by the instructional objective but should be aimed at parsimonious teaching. In other words, the instructional emphasis should be on what a student needs to achieve the objective and not other items. The teacher should

1. Question the students about their understanding of the objective.
2. Pinpoint specifically where they are having difficulty.
3. Present information specific to that point.
4. Require the students relate the new information to their previous understanding of the objective.
5. Require the students to relate the new information to a variety of situations.
6. Clarify the next step on the TLU so the students can proceed independently.

Another important type of discussion is to clarify and extend concepts. The role of the leader in this type of discussion is as follows

1. State the topic to be discussed.
2. State (or review) the criteria for discussion.
   a. Position taken by the discussant (or participant) on which there could be differing opinions.
   b. Discussant uses evidence to support the statement.
   c. There is a relationship between the statement and the supporting evidence.
3. Direct the participation by discussants so there is an equal opportunity for all students to participate.
4. Reinforce responses that have supporting evidence.
5. Ask for re-statements by participants of points needing amplification, clarification, or modification.
6. Re-state the criteria used to evaluate the discussion at the end of the discussion period.
7. Summarize the major points at the end of the discussion.

This type of discussion lends itself to the use of the teacher as a model of the group discussion leader. The role of the teacher as a model of a specific role is really an independent issue and having such discussions is not dependent on the teacher modeling the role. The students should feel that they can indicate appropriate times and topics for group discussion to the teacher.

Effect of Group Discussion

In observing group discussion the following items will give an indication of the effectiveness of the discussion

1. Do the students attend during the entire discussion or only when it is "their turn"?
2. Is the size of the group small enough to insure more than one participation by each student?
3. Do students go willingly when the group is called?
4. Is the objective of the session well defined at the beginning of the session?
5. Is the objective summarized and evaluated at the end of the session?
6. How often do students participate in a group discussion? The minimum seems twice a week.
7. Are students supporting statements with facts rather than opinion?
8. Are they able to model the role of the group discussion leader themselves?
9. Are the students interested enough to suggest times and topics for possible group discussions?
10. Are students willing to accept differing opinions?
11. Are each of the students encouraged to participate in the discussion at some appropriate time?
12. Are new, unusual and valid approaches to the problem reinforced?

V. ACTIVITIES NOT CONTRIBUTING TO THE GOALS IN A PLAN CLASSROOM

1. Permanently assigned seats for students.
2. Complete clean-up procedures before each recess.
3. Instructional groups conducted from teacher's manual rather than selecting those items which relate to TLU objectives. The responsibility for learning the material must rest with the student. It would be easy for the teacher to "over-teach" when calling instructional groups or tutoring sessions. The dangers in this are (1) inefficient use of the teacher's and student's time, (2) maintaining dependency on the teacher. As much as possible, the instructional strategies of the teacher should be modeling ways for the student to obtain the information himself or instruction in techniques of learning that are generalizable across several subjects and objectives.
4. Record-keeping which duplicates information retrievable from the computer.
5. Stopping the whole class for instruction they will need sometime in the future. This is not to be confused with stopping the whole class for some non-PLAN activity. There will be news events, weather changes, art or music activities which might be of such a nature the teacher would ask the whole class to participate. This is a desirable and not an undesirable procedure. It is undesirable when it relates to items in TLUs in which individuals are not currently working.
6. Speaking out and disrupting the entire class for the purpose of calling or correcting one or several students.
7. Scheduling the time periods for the students by class.
8. Changing rooms en masse to facilitate team teaching.
9. Any teacher activity or decision handling which could be shared with the student.
10. Teacher pacing groups of students through the same module.
11. Teacher checking students performance on module test before sending test card to be scored by computer. Students should be encouraged to check their own work and should be able to approximate the level of the test performance before getting the test scored by the computer.
12. Students taking the same module test together and discussing questions and answers.

PLAN QUESTIONS AND ANSWERS

1. What is PLAN?

   PLAN (Program for Learning in Accordance with Needs) was initiated in September, 1967, through cooperative efforts of the American Institutes for Research, the Westinghouse Learning Corporation, and 12 school districts in California, Massachusetts, New York, Pennsylvania, and West Virginia. It is a new educational system which uses the computer as an aid to the teacher in providing each student with an individual program of study, tailored to his needs, abilities, and interests. This approach is designed to help the student develop his skills, acquire knowledge, and prepare himself for living and learning in our society.

2. What is A.I.R.?

   The American Institutes for Research is a nonprofit behavioral-science research organization which conducts studies primarily in the areas of psychology and education. The main office of A.I.R. is in Pittsburgh, Pennsylvania, with other offices in Washington, D.C., and Palo Alto, California.

3. What is the Westinghouse Learning Corporation?

   The Westinghouse Learning Corporation is a subsidiary of the Westinghouse Electric Company, founded in February, 1967. It is devoted to broad-based activities in the field of education.

4. What grades are involved in PLAN?

   Initially, in September, 1967, grades 1, 5, and 9 were involved. For the second year of operation, grades 2, 6, and 10 were added. In four years, PLAN will encompass grades 1 through 12 in selected schools within the 12 school research and development districts. It is operating in grades 1 and 2 in four extension schools.

5. What subject areas are in PLAN?

   Mathematics, language arts (English, reading, etc.), science, and social studies are presently involved in PLAN. Other subject areas are to be added as soon as the modules are completed.

6. What is individualized instruction?

   It consists of planning and conducting, with each student, a program of studies that is specifically tailored to his learning needs and characteristics as a learner. Individualized instruction, as a way of teaching, requires that each individual student (rather than the group) be the starting point for all instructional decisions. This is the only restriction in the definition.

7. How is instruction individualized in PLAN?

   PLAN is a system for allowing and assisting a student to achieve those instructional objectives defined by his Program of Studies. The components of the system are a set of instructional objectives, a variety of study plans to achieve those objectives, and a system of monitoring student progress.

8. What is a Program of Studies?

   A Program of Studies is a tentative selection of the modules in a subject area which the student will study during a specific period of time. This period of time is usually an academic year.

9. What is a Module?

   A module is a set of instructional objectives which are intended to be achieved by the average student in approximately two weeks. The main vehicle for the teaching of the instructional objectives of a module is the TLU. Each of the modules will be designed using different instructional strategies to teach the objectives of the module.

10. What is meant by an individualized schedule?

    Each student has a schedule for completing the objectives on his Program of Studies. For some students this schedule will be simply a listing of expected completion dates for the modules. For other students the schedule will include frequent monitoring and checks. The schedule is, therefore, individualized with respect to the learning needs, characteristics, and style of the student.

11. What is an Instructional Objective?

    It is observable behavior achieved by the student under certain performance conditions and meeting an acceptable mastery criterion.

12. What is a TLU?

    A teaching-learning unit (TLU) is an instructional unit designed to assist students to achieve the instructional objectives of a module using existing commercial instructional materials. TLU's can differ in mode of presentation, amount of practice, amount of review, pacing, level of reading difficulty, etc. A TLU consists of a set of directions for the student, the instructional objectives of the module, a list of the instructional materials he is to use, what he is to do with them, and sample test items which tell the student how he will know when he has succeeded in achieving the instructional objectives of the module.

13. How does a student begin his instruction within PLAN?

    At the beginning of the school year, each student is given a suggested set of modules within which he needs to work. The suggestion is made on the basis of background information on the student and various achievement interest data.

13. (continued)

No student is asked to work within a module and achieve objectives which he can already do or work within a module for which he has not achieved the prerequisite behavior.

14. What is meant by prerequisite behavior?

A student would not work in a module relating to division without first performing satisfactorily the prerequisite behavior in multiplication. Satisfactory performance of multiplication skills is a prerequisite behavior for division skills.

15. What is an Instructional Guide?

An Instructional Guide is instructional material developed by the Project PLAN staff to accompany a TLU when existing instructional materials are either inadequate or inappropriate for the achievement of a specific instructional objective or set of instructional objectives.

16. What does a student do if he has difficulty working on a TLU for a particular module?

He seeks assistance from the teacher or another student.

17. What happens if a student has difficulty meeting the goals of his Program of Studies?

If both teacher and student agree that the student cannot meet the requirements for his Program of Studies, then together they devise an individualized strategy that will help him achieve the objectives of his Program of Studies. If the student still has difficulty, the Program of Studies will be considered for revision.

18. Do students have an opportunity to work together?

Yes. This is encouraged in PLAN. You will see different instructional settings in PLAN classrooms which are as follows:

a. Independent study - student working alone

b. Teacher tutor

c. Peer tutor

d. Student tutor - older student assisting a younger student

e. Small group - 2 to 5 students

f. Large group - over 5 students

19. What is a Module Test?

A module test is a test taken by the student when he completes the TLU to determine whether or not the student has achieved the objectives of that module. The module test is designed so that most of the items will be answered correctly by the student if he has adequately prepared himself for the attainment of the objectives of the module (the "success principle"). In most cases, the teacher and student confer jointly to decide if the student is ready to challenge the module test.

20. How is the Module Test scored?

Each module test is scored by the computer and the teacher and student are informed of the student's performance level in achieving each of the objectives of the module and/or the particular instructional objectives which require further attention by the student.

21. What part does the computer play in Project PLAN?

The services of a computer are provided as a flexible tool for information processing, storage, and retrieval. Stored in the computer is detailed information on the students' special aptitudes, patterns of learning, interests. and backgrounds. In addition, a record is kept of the skills and knowledge the student has acquired prior to reaching any given decision point. The computer also stores a complete file listing instructional materials in the form of modules or TLU's which are systematically indexed in terms of what each student is expected to learn from them, what the prerequisites are, and for what other type of student and situation this unit is especially well-suited.

22. How is the teacher informed about the results of a Module Test?

A Printout is received from the terminal of the computer which provides the test results to the teacher and student.

23. What is a Printout?

A printout is simply a sheet of paper listing pertinent information received from the output terminal of the computer regarding each student.

24. What are the Guidance TLU's?

The Guidance and Individual Planning Division is attempting to integrate guidance content and process into basic subject matter. Guidance-oriented TLU's are being integrated as closely as possible with TLU's in all curriculum areas at all grade levels. These TLU's will be distinguishable from the subject matter TLU's only by a numerical code.

25. Do students in Project PLAN receive homework assignments?

Homework assignments can be an integral part of PLAN. A student working on a TLU always has a homework assignment since he can continue to work on objectives and activities in the TLU's.

26. What happens to those students in PLAN who transfer to non-PLAN schools?

PLAN curriculum includes the required objectives on a state-level basis and also at the local school district level. A student transferring within a school district or within a state should have little or no adjustment problem. A student transferring between states may have the usual transfer problem, but the learning experiences the student had in PLAN, especially having the responsibility for his own learning, will assist in the transfer adjustment.

27. What about the students in non-PLAN schools who transfer to PLAN schools?

A placement test is given to the student to determine where he should begin work in each of the subject areas. The student is usually assigned to an "experienced" PLAN student who immediately answers any questions relating to the procedures of PLAN.